Effect of Mechanical Treatment (Cont.)

polished S indicates the lower level of strengthening of the metal surface. The M of the working surfaces of the S after it had been worked in (75,000 revolutions) was 210-286 kg/mm^2 regardless of the prior method of machining.

A.B.

1. Machine tools--Test methods 2. Machine tools--Test results

Card 2/2

DUDKO, P.D.

137-58-3-5972

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 217 (USSR)

AUTHORS: Gorbenko, V. L., Dudko, P. D.

TITLE: Wear Resistance of Electrolytically Polished Steel Surfaces (Iznosoustoychivost' stal'nykh elektropolirovannykh poverkhnostey)

PERIODICAL: Tr. Khar'kovsk. politekhn. in-ta, 1957, Vol 11, pp 141-142

ABSTRACT: Investigations were carried out in order to evaluate the wear resistance (WR) of 45 grade steel which had been superfinished or polished electrolytically to an identical degree of microroughness. In both instances the quality of surface finish could be classified as class 12 within the GOST 2789-51 scale. WR tests were performed on an Amsler machine. The extent of wear was determined by means of weighing the specimens. It was established that the criterion employed in the evaluation of surface quality in terms of the average height of microroughness is not fully representative of the conditions of the surface finishing process. Operational characteristics of articles operating under friction depend on the magnitude of the microroughness and on the nature of the surface microtopography. Surface quality of articles which have been polished electrolytically closely approaches the quality obtained

Card 1/2

137-58-3-5972

Wear Resistance of Electrolytically Polished Steel Surfaces

by superfinishing methods and exhibits WR characteristics which are superior to those achieved by superfinishing.

N. K.

Card 2/2

18.5200

SOV/123-59-23-96960

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1959, Nr 23, p 110 (USSR)

AUTHOR: Dudko, P.D.

TITLE: Mechanical Lapping With the Aid of Free Abrasives of Cylindrical Steel Machine Parts With Intermittent Surfaces

PERIODICAL: Byul. tekhn.-ekon. inform. (Sovnarkhoz Khar'kovsk. ekon. adm. r-na), 1958, Nr 2, pp 11 - 16

ABSTRACT: The author presents investigation results of the process of mechanical lapping of machine parts with intermittent surfaces. The tests were carried out with hardened cylindrical specimens of the steel grades 40Kh, 20Kh, and 45 ($R_c > 50$), 25 - 70 mm in diameter, the part to be machined was 65 mm long and possessed two ring-shaped grooves of 2 mm width. Before being lapped the operating surfaces of the specimens were ground under equal conditions. Lapping was carried out by a lap of gray cast iron of pearlite-ferrite structure. The abrasive mixture was supplied to the cutting zone through the hollow lap. The author studied the pressure effect of the peripheral speed of the machine part, as well as the oscillating motion of the lap, grain size and composition of liquid, being contained in the abrasive

Card 1/2

80188
SOV/123-59-23-96960

Mechanical Lapping With the Aid of Free Abrasives of Cylindrical Steel Machine Parts With Intermittent Surfaces

mixture composition, on the quantity of the metal being removed and surface finish. The optimum lapping conditions were found to be the following: lap pressure = 1.5 - 2 kg/cm^2, peripheral speed of machine part = 30 - 40 m/min with a lap oscillation of 800 oscillations/min and an amplitude of 5 mm. As lapping liquid the following mixture should be used: 34% kerosene and 66% spindle oil. It is not recommended to carry out lapping with abrasive grains coarser than Nr 320. Eight figures.

B.I.M.

Card 2/2

DUDKO, F.D.; TSENTA, Ye.L.; KACHER, V.A.

Lapping with oscillation of the lap and continuous feed of abrasives. Stan.i instr. 29 no.12:26-27 D '58. (MIRA 11:12)
(Grinding and polishing)

DUDKO, P.D., Cand Tech Sci — (diss) "Study of the process of finishing steel cylinder parts by means of a free abrasive with the oscillating motion of the lap." Khar'kov, 1959, 14 pp (Min of Higher Education UkSSR. Khar'kov Polytechnic Inst im V.I. Lenin) 120 copies (KL, 33-59,118)

TSENTA, Ye.L.; KACHER, V.A.; DUDKO, P.D.

Lapping parts made of 4Kh13 steel with abrasive dusts. Trudy KhPI 21 Ser.met. no.4: 73-76 59. (MIRA 14:7)
(Grinding and polishing)

DUDKO, P.D.

Effect of the material of the lap on the result of lapping steel parts with a loose abrasive. Trudy KhPI 21 Ser.met. no.4:77-84 '59. (MIRA 14:7)

(Grinding and polishing)

DUDKO, P.D.

Investigating the effect of steel hardness on the efficiency of lapping parts having broken surfaces with a loose abrasive. Trudy KhPI 21 Ser.met. no.4:85-94 '59. (MIRA 14:7)
(Grinding and polishing)

DUDKO, P.D.

Seizing of machine parts caused by the friction of boundary layers. Trudy KhPI 21 Ser.met. no.4:99-105 '59. (MIRA 14:7)
(Friction)

S/122/60/000/006/011/012
A161/A026

AUTHOR: Dudko, P. D., Candidate of Technical Soiences

TITLE: Methods for Raising the Productivity of Metal Surface Finishing With Loose Abrasives

PERIODICAL: Vestnik mashinostroyeniya, 1960, No. 6, pp. 71-74.

TEXT: Results of experiments are given in finishing machine parts with loose abrasive material, using a special hydraulic device installed on a circular grinding machine, a cast iron lap with a cavity and a groove, and a special mixer for abrasive matter. P. D. Dudko, Ye. L. Tsonta and V. A. Kacher obtained an Author's Certificate for the method, No. 119451, of February 28, 1959. The optimum lap pressure stated was 2-3 kg/cm^2; increasing rotation speed of the part resulted in faster metal cutting from the surface, but at a circumferential speed higher than 25-35 m/min the surface finish spoiled through heating and uneven feed of abrasive. It is recommended to use higher speed in the beginning (50-75 m/min), and reduce it toward the end of the process (25 m/min). Oscillating motion of the lap, with 5 mm amplitude and not more than 800 oscillations per minute,

Card 1/2

S/122/60/000/006/011/012
A161/A026

Methods for Raising the Productivity of Metal Surface Finishing With Loose Abrasives

raises the surface finish about one class according to GOST 2789-59 standard. Stable process was obtained with not less than 60 g abrasive per 1 liter kerosene. Green carborundum and boron carbide removed metal faster than white electrocorundum, but the finish was inferior. With an addition of 2% of oleic acid in kerosene, metal removal increased by 19% in lapping without oscillation, and 33% with oscillations. Addition of 2% of spindle oil had nearly the same result (20 and 27% faster work, respectively), which is due to active additives in the spindle oil "2" used, like naphthenic acids. Such surface-active matters spoiled the surface finish. The best material for the lap proved to be grey cast iron with fine graphite inclusions. Good finish was obtained with a lap from ferrito-pearlitic cast iron of 150 Brinell hardness. Lapping with oscillating tool reduced the geometric inaccuracy of parts. No good finish could be obtained on parts with interrupted surface, because of wear of the lapping tool too fast and uneven. There are 6 figures and 3 Soviet references.

Card 2/2

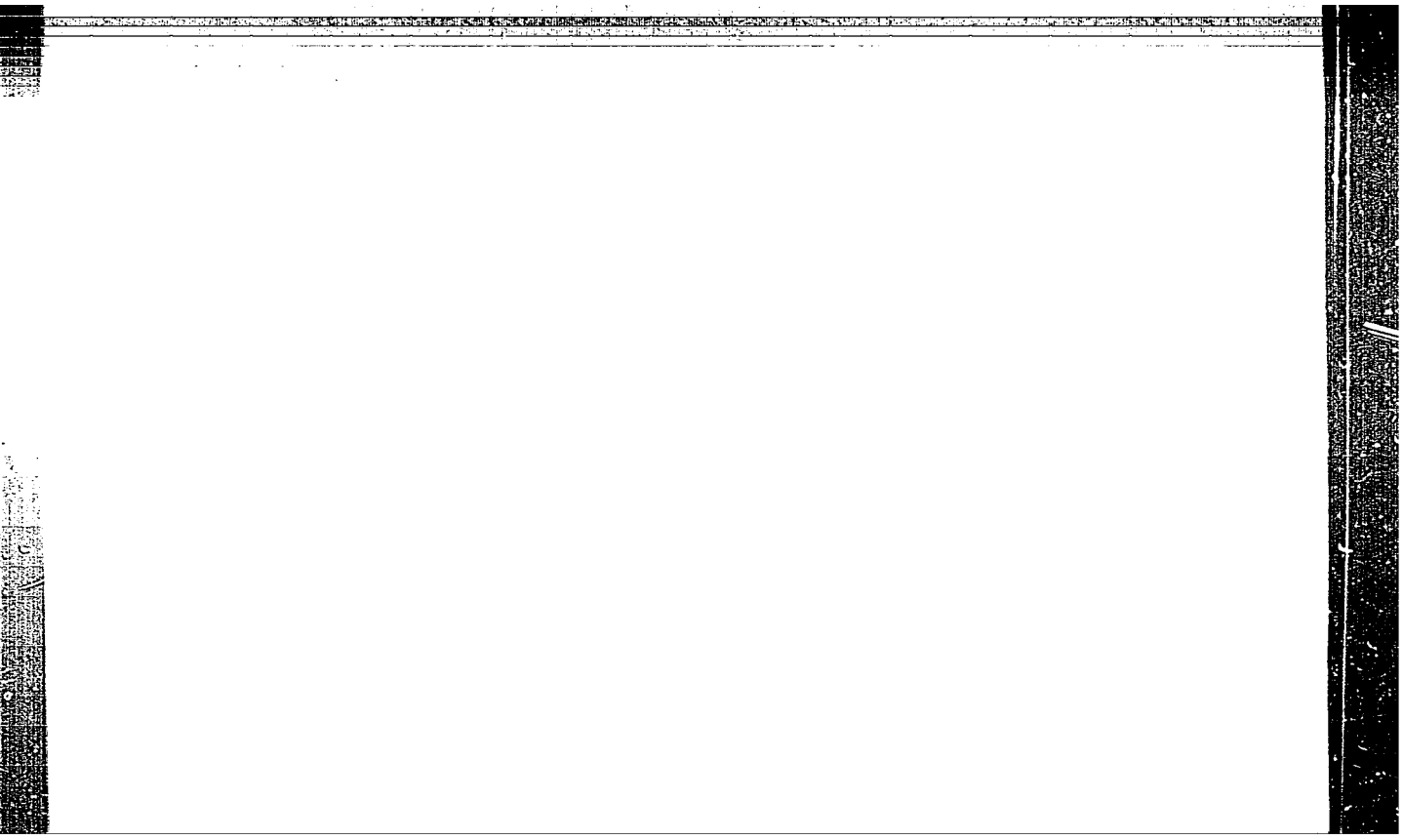
DUDKO, P.D., kand.tekhn.nauk

Using loose abrasives in lapping steel parts with oscillating lapping disks and a continuous feed of abrasive mix. Izv.vys.ucheb.zav.; mashinostr. no.7:128-133 '60. (MIRA 13:11)

1. Khar'kovskiy politekhnicheskiy institut.
(Grinding and polishing)

DUDKO, Petr Dmitriyevich. KACHER, V.A., kand. tekhn. nauk, otv. red.; ALYAB'YEV, N.Z., red.

[New materials in technology] Novye materialy v tekhnike. Khar'kov, Izd-vo Khar'kovskogo univ., 1964. 171 p. (MIRA 18:1)



APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R000411430005-3"

DUDKO, T.I., inzhener

Determining the level of labor mechanization in construction. Trudy Ural. politekh. inst. no.120:33-41 '61. (MIRA 16:6)
(Sverdlovsk Province--Construction industry--Technological innovations)

L 09137-67 EWT(m)/EWP(j) IJP(c) RM

ACC NR: AP6031282 SOURCE CODE: UR/0229/66/000/008/0063/0063

AUTHOR: Bagnenko, F. M.; Kayda, Yu. A.; Prokhorov, N. P.; Dudko, T. V. 29 22

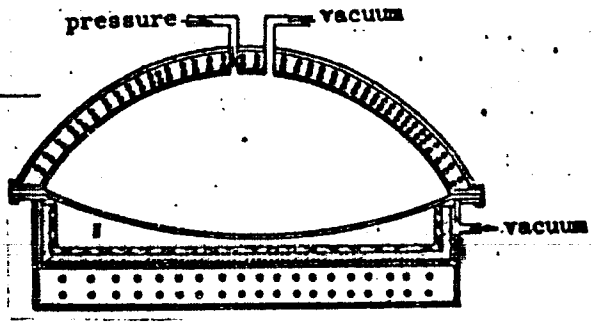
ORG: None

TITLE: Production of fiberglass-reinforced plastic products

SOURCE: Sudostroyeniye, no. 8, 1966, 63

TOPIC TAGS: fiberglass, reinforced plastic, plastic fabricating machinery

ABSTRACT: The authors describe the development of a unit for combination forming of cabin doors and heat control panels. The unit was produced at the Kherson Shipbuilding Plant and is composed of a pressing chamber and vacuum chamber (see figure). The pressing chamber is a welded dome-shaped cover equipped with an insulated jacket. The vacuum chamber has doors which are air-tight. A diaphragm is placed between the pressing and the vacuum chambers. This diaphragm does the actual pressing. The unit is heated by tubular electric



Card 1/2 UDC: 678.029.46:666.189.211

L 09137-67

ACC NR: AP6031282

heaters. The working temperatures are from 20 to 180°C and are automatically controlled. The following components are used for the products: PN-3(VTU33122-60LSNKh) polyethylene resin, ASTT(6)C2 and KhTK-1 glass fillers and PKhV-1 foam plastic filler. The filled dies are placed inside the chamber which is preheated to 80-90°C and hermetically sealed. The vacuum initially is set at 600-650 mm Hg and four atmospheres are allowed to pass through the pressure feed after 5 to 6 minutes. The vacuum becomes weaker over a period of 10 to 15 minutes. The entire process takes 30 to 40 minutes. After the molding operation is finished, the pressure in the upper chamber is reduced and the die casting mold is removed through the door. The shell is removed from the mold and filled with PKhV-1 filler after which the cover is glued on. The unit is then placed in a hydraulic press and held for 24 hours. Such doors are 2.5 times lighter than wooden doors and their production saves 12,350 rubles a year. Orig. art. has: 3 figures.

SUB CODE: 13/ SUBM DATE: None

Card 2/2 nst

FLEYSH, M.A., gornyy inzh.; SHCHARANSKIY, B.M.; DUDKO, V.A., inzh.; ROZENBERG, F.Ya.

Brief news. Ugol' Ukr. 7 no.6:51-55 Je '63. (MIRA 16:8)

1. Korrespondent zhurnala "Ugol' Ukrainy" (for Shcharanskiy).
2. Starshiy inzh. TSentral'nogo nauchno-issledovatel'skogo instituta informatsii i tekhniko-ekonomicheskikh issledovaniy ugol'noy promyshlennosti (for Rozenberg).

TOVSTANOVSKIY, Dmitriy Pavlovich; SHOSTAK, Afanasiy Grigor'yevich; NESTEROV, Petr Grigor'yevich; DUDKO, Viktor Dmitriyevich; AFONINA, G.P., red.izd-va; SHAFETA, S.M., tekhn. red.

[Technical and economic ore mining handbook] Tekhniko-ekonomicheskii gorno-rudnyi spravochnik. Kiev, Gostekhizdat USSR, 1963. 316 p. (MIRA 17:3)

BELASH, Aleksandr Sergeyevich, inzh.; KOVALEV, Aleksey Fedotovich, kand. tekhn. nauk; LINNIK, Grigoriy Filippovich, kand. tekhn. nauk; NESTERENKO, Vladimir Vasil'yevich, inzh.; SHKUTA, Eduard Ivanovich, inzh.; DUDKO, V.D., inzh., retsenzent; AFONINA, G.P., red.

[Improving systems of mining iron-ore deposits] Usovershenstvovanie sistem razrabotki zhelezorudnykh mestorozhdenii. Kiev, Tekhnika, 1965. 207 p. (MIRA 18:12)

KUSOV, T.T.; AGGERT, B.A.; DUDKO, V.I.

Results of testing potato diggers. Trakt. i sel'khozmash. 32 no.12:26-27 D '62. (MIRA 16:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya (for Kusov).2. Konstruktorskoye byuro zavoda "Belinksel'mash" (for Dudko).
(Potato digger (Machine)--Testing)

DUDKO, V. M.

DUDKO, V. M. "Treating trachoma with subconjunctival injections of 'al'butsid'", Sbornik nauch. trudov Khabar. voyen. gospitalya, III, Khabarovsk, 1948, p. 90-95.

SO: U-4393, 19 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

DUDKO, V.A., inzh.; POMELIN, N.M., inzh.

Ways of reducing the consumption of electric power for the driving of exhaust fan systems. Elek.sta. 32 no.9:32-36 S '61. (MIRA 14:10)

(Fans, Electric)

SAL'NIKOV, Yu.K.; YANOVITSKIY, S.E.; DUDNIK, V.P., insh., retsenzent; PREDE, V.Yu., insh., red.; KHITROV, P.A., tekhn. red.

[Distribution of steel mill products in gondola cars] Razmeshchenie metalloproduktsii na otkrytom podvizhnom sostave. Moskva, Transzheldorizdat, 1963. 50 p. (MIRA 16:7)
(Railroads--Freight)

DUDKO, V.P., insh.

Rapid selection of cross-sections of prestressed-reinforced flexible elements of sectional reinforced-concrete supports. Krepl. gor. vyr. ugol'. shakht no. 1:107-116 '57. (MIRA 11:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut organizatsii i mekhanizatsii shakhtnogo stroitel'stva.
(Mine timbering)
(Reinforced concrete construction)

DUDKO, V.P.

KHKEL'NITSKIY, L.Ya., insh.; IVANOV, P.S., insh.; KOMAREVA, V.P., insh.; DUDKO, V.P., insh.

Prestressed-reinforced UPP slab supports made by concreting machinery. Krepl. gor. vyr. ugol' shakht no. 1:163-167 '57. (MIRA 11:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut organizatsii i mekhanizatsii shakhtnogo stroitel'stva.
(Mine timbering)
(Reinforced concrete construction)

SOV/124-58-7-8175

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 7, p 121 (USSR)

AUTHORS: Al'ferov, B.V., Dudko, V.P.

TITLE: On the Localized Loads on Mine-shaft Timbering Situated in a Region of Heaving Ground (O mestnykh nagruzkakh na krep' rabotayushchuyu zone pucheniya)

PERIODICAL: Shakhtnoye str-vo, 1957, Nr 12, pp 5-7

ABSTRACT: Bibliographic entry

1. Mines--Safety measures 2. Wood--Mechanical properties
3. Mathematics--Applications

Card 1/1

ALYEKOV, B.V., insh.; DUDKO, V.P., insh.

Reinforced concrete UKSh-III mine railroad ties. Shakht. stroi. no.5:26-27 '58. (MIRA 11:6)
(Mine railroads) (Reinforced concrete construction)

KHMEL'NITSKIY, L.Ya.; BONDARENKO, V.M.; IVANOV, P.S.; DUDKO, V.P.

Universal reinforced concrete element. Gor. zhur. no.10:31 O '58. (MIRA 11:10)
(Reinforced concrete construction--Patents)

POKALYUKOV, S.M., insh.; ALFEROV, B.V., insh.; DUDKO, V.P., insh.

UKPM sectional reinforced concrete supports. Shakht.stroi. no.2:20-23 F '59. (MIRA 12:3)

(Mine timbering)
(Reinforced concrete construction)

AKOL'ZIN, L.Ye.; BOROZDOV, I.A.; BEDILO, V.Ye.; TERESHKIN, F.N. Prinimali uchastiye: BELYAYEV, F.R.; BEREZHNOY, N.V.; BUBYR', V.A.; VARSHAVSKIY, I.M.; DUDKO, V.P.; YERSHOV, V.S.; DUGIN, Ye.V.; DUKALOV, M.F.; IVANOV, F.S.; KOMAREVA, V.F.; MOSIN, M.I.; MOGILKO, A.P.; PANCHENKO, A.I.; POKALYUKOV, S.N.; PRIKHOD'KO, M.D.; RUBIN, I.A.; SIDORENKO, P.A.; TYUTYUNIK, Ya.I.; KHMEL'NITSKIY, L.Ya.; BONDAR', V.I.; KRIVTSOV, A.T.; LOKSHIN, V.D.; SOFIYENKO, N.P. RABINKOVA, L.K., red.izd-va; BOLDYREVA, Z.A., tekhn.red.

[Types of mine cross section] Tipovye secheniia gornykh vyrabotok. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu. Vol.4. [Cross section of mines supported by a sectional reinforced-concrete lining of URP-11 panels for 1-, 2- and 3-ton railroad cars] Secheniia vyrabotok, zakreplennykh sbornoi zhelezobetonnoi krep'iu iz plit URP-II, dlia 1-, 2- i 3-tonnykh vagonetok. 1960. 278 p. (MIRA 13:12)

1. Khar'kov. Gosudarstvennyy proyektnyy institut Yuzhgiproshakht. (Mine timbering)

ALFEROV, B.V., insh.; DUDKO, V.P.

APK arch-type pliable support. Shakht. stroi. 7 no.4:6-8 Ap '63.
(MIRA 16:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut organizatsii i mekhanizatsii shakhtnogo stroitel'stva.

DUDKO, Ye.M., kand.med.nauk

Study of the incidence of rheumatic fever. Vrach.delo no.10:94-95 O '60. (MIRA 13:11)

1. Kafedra organizatsii zdravookhraneniya (zav. - dotsent I.P. Pigida) Kiyevskogo meditsinskogo instituta.
(RHEUMATIC FEVER)

DUDKO, Ye.M.

Some problems in the epidemiology of rheumatic fever. Zh. mikrobiol. 40 no.7:132-137 Jl '63 (MIRA 17:1)

1. Iz Kiyevskogo ordena Trudovogo Krasnogo Znameni meditsinskogo instituta.

KARPUKHIN, P.P.; LEVCHENKO, A.I.; DUDKO, Ye.V.

Vinylation of acenaphthene and anthracene by acetylene. Zhur. prikl. khim. 34 no.5:1117-1121 My '61. (MIRA 16:8)

(Acenaphthene) (Acetylene)
(Vinyl polymers)

DUDKO, Z.G.

Effect of the water balance of leaves and the dynamics of stomata on the efficiency of photosynthesis in corn. Sbor. bot. rab. Bel. otd. VBO no.2:185-188 '60. (MIRA 15:1)
(Photosynthesis) (White Russia—Corn (Maize))

DUDKO, Z.G.; KURBATOV, I.M.

Photosynthesis of corn in White Russia. Sbor.nauch.rab.Bel.otd.VBO no.1:25-31 '59. (MIRA 14:4)
(White Russia—Corn (Maize)) (Photosynthesis)

KURBATOV, I.M.; DUDKO, Z.G.

Productivity of the leaf apparatus of corn in the White Russian S.S.R. Sbor. nauch. rab. Bel. otd. VBO no.3:55-63 '61. (MIRA 14:12)

(White Russia—Corn (Maize))
(Photosynthesis)

DUDKO, Z.G.

Dynamics of the accumulation and translocation of assimilants in corn. Dokl. AN BSSR 7 no.7:477-480 Jl '63. (MIRA 16:10)

1. Belorusskaya sel'skokhozyaystvennaya akademiya, g. Gorki. Predstavleno akademikom AN BSSR T.N.Godnevym.

DUDKOV, I., polkovnik, kand. filosofskikh nauk

Formation of communist social relations. Komm. Vooruzh. Sil 5 no.2:51-58 Ja '65. (MIRA 18:3)

BELOV, A.; SKAKUNOV, I.; SAVITSKIY, V., trener; GRAMAKOVSKIY, G.; DUDKOVA, O.; MINAYEV, A.; PEN'KOV, I.; SEREBRYAKOV, Ye., master sporta

Increase the number of sportsmen and improve their skill. Za rul. 20 no.7:3 Jl '62. (MIRA 15:7)

1. Nachal'nik Vitebskogo avtomotokluba, predsedatel' oblastnoy kollegii sudey (for Belov). 2. Predsedatel' soveta Vitebskogo avtomotokluba (for Skakunov). 3. Chlen soveta Vitebskogo avtomotokluba (for Savitskiy, Gramakovskiy, Dudkova)
(Vitebsk—Motor vehicles—Societies, etc.)

BERKHIN, Ye. B.; DUDKOVA, V. A.

Effect of oxytocin on the urinary function of the kidneys. Probl. endok. i gorm. 8 no.3:31-36 My-Je '62. (MIRA 15:6)

1. Iz kafedry farmakologii (zav. - doktor meditsinskikh nauk Ye. B. Berkhin) Altayskogo meditsinskogo instituta.

(DIURETICS AND DIURESIS) (OXYTOCIN)

CHIBRIKOVA, Ye. V.; KUZNETSOVA, V.I.; RAZUMOVA, L.P.; DUDKOVA, V.K.

Rapid method for the detection of Vibrio comma in water and in washings of objects in external environment by using fluorescence microscopy. Zhur. mikrobiol. epid. i immun. 29 no.12:52-56 D '58. (MIRA 11:12)

1. Iz Gosudarstvennogo nauchno-issledovatel'skogo instituta epidemiologii i mikrobiologii Yugo-Vostoka SSSR. ("Mikrob").
(VIBRIO COMMA,
detection in water, luminescence microscopic method (Rus))
(WATER, microbiology,
Vibrio comma, luminescence microscopic detection (Rus))

DUDKOWSKI, L.

1997. THREE CASES OF PULMONARY PARAGONIMIASIS - Trzy przypadki paragonimiasis płuc - Dudkowski L. and Siudak A. Dzieciec. Ośrodka Prewentor. -Sanat. w Rabce - GRUŹLICA 1957, 25/1 (57-62) Illus. 6

Ova of the Paragonimus were recovered from the sputum and from the bronchial lavage. Seven days' treatment with emetine failed to bring about any improvement. The opinion is held that in sanatorium patients, coming from areas in which paragonimiasis occurs, examinations for Paragonimus should be carried out.

(L, 6, 15)

DUDKOWSKI, Leszek

Abnormal bronchial development in children. Gruzlica 29 no.5: 445-451 My '61.

1. Z Dziecicego Osrodka Sanatoryjno-Preventoryjnego w Rabce Dyrektor: dr J. Rudnik.

(BRONCHI abnorm)

DUDKOWSKI, Leszek; RZEPECKI, Tadeusz

Surgical treatment of Kartagener's triad. Pediat. Pol. 39 no.12: Pediat. Pol. 29 no.12:1381-1384 D '64

1. Z Dzieciecego Osrodka Sanatoryjnego w Rabce (Dyrektor: dr. med. J. Rudnik).

RZEPECKI, Tadeusz; DUDKOWSKI, Leszek

Persistant Botallo's arterial duct and bronchiectasis. Pol. przegl. chir. 36 no.9:1127-1128 S '64

1. Z Dzieciecego Osrodka Sanatoryjno-Preventoryjnego w Rabce (Dyrektor: dr. J. Rudnik).

DUDKOWSKI, Leszek; BAK, Zofia; OBRAPALSKA, Ewa

Histological picture of perifistular granulations. Gruzlica 33 no.8:713-715 Ag '65

1. Z Dziecicego Osrodka Sanatoryjno-Preventoryjnego w Rabce (Dyrektor: dr. med. J. Rudnik).

DUDLER, I.V.

OGURTSOV, A.I., insh.; DUDLER, I.V., insh.

Observations of hydraulic fill at the site of the Kuybyshev Hydroelectric Power Station. Gidr.stroi. 26 no.9:24-27 S '57. (MIRA 10:10)

(Kuybyshev Hydroelectric Power Station)

BELCHER,E.H.; COHEN,M.; DUDLEY,R.A.; PARKER,H.G.; TSIEN,K.C.; VETTER,H.

Progress in the use of isotopes and radiation sources in medicine. Cas. lek. cesk. 104 no.19:100-104 14 My '65.

1. MAAE a WHO.

BASIEWICZ, Tadeusz, dr inz.; DUDLINICZ, Slawomir, mgr inz.

Glued joints of steel and concrete. Inz i bud 21 no.2: 47-51 F '64.

DUDNEV, D.

Using tractor trains for centralized freight haulage. Avt.transp. 38 no.6:26-27 Je '60. (MIRA 14:4)

1. Glavnyy insh. Kalininskogo oblavtotresta.
(Tractor trains)

DUDNEV, D.

Improve the organization of passenger traffic. Avt. transp. 43 no.3:1-3 Mr '65. (MIRA 18:5)

1. Nachal'nik glavnoy komissii po organizatsii passazhirskikh perevozok Ministerstva avtotransporta i shosseynykh dorog.

DUDNICHENKO, A. (Simferopol')

The "Gauia" radio receiver with KB3-L-O, 5 batteries. Radio no.2:64 F '63. (MIRA 16:2)

(Transistor radios)

AUERKHAN, Yan, ekonomist; GLYAZER, L., red.; DUDNICHENKO, E., mladshiy red.; CHEPELEVA, O., tekhn.red.

[Automation and society] Avtomatizatsiia i obshchestvo. Moskva, Izd-vo sotsial'no-ekon.lit-ry, 1960. 168 p. (MIRA 13:5)
(Automation)

ZAKSE, Diter; LEPNIKOVA, Ye., red.; DUDNICHENKO, E., mladshiy red.; SHISHANKOV, V., mladshiy red.; CHEPELEVA, O., tekhn.red.

[Socialist transformation of agrarian relations in the German Democratic Republic] Sotsialisticheskie preobrazovaniia agrarnykh otnoshenii v Germanskoi Demokraticheskoi Respublike. Moskva, Izd-vo sotsial'no-ekon.lit-ry, 1960. 196 p. (MIRA 14:2)
(Germany, East—Agriculture, Cooperative)

BARABANOV, Mikhail Vasil'yevich; LEPNIKOVA, Ye., red.; DUDNICHENKO, E., mladshiy red.; NOGINA, M., tekhn.red.

[Economic competition between the two systems; criticism of the opinions of bourgeois ideologists of the U.S.A.] Ekonomicheskoe sorevnovanie dvukh sistem; kritika vzgliadov burzhuaznykh ideologov SShA. Moskva, Izd-vo sotsial'no-ekon.lit-ry, 1960. 185 p. (MIRA 14:4)

(Economics)

KLIMOV, Nikolay Andreyevich; BUDARINA, V., red.; DUDNICHENKO, E., mladshiy red.; MOSKVINA, R., tekhn. red.

[The workday in a society building communism]Rabochii den' v obshchestve, stroiashchem kommunizm. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1961. 142 p. (MIRA 14:6)
(Hours of labor)

LITVYAKOV, Pavel Petrovich; TYAPKIN, Nikolay Kapitonovich; BUDARINA, V., red.; DUDNICHENKO, M., mladshiy red.; MOGINA, N., tekhn. red.

[Communal labor and its productivity] Obshchestvennyi trud i ego proizvoditel'nost'. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1961. 149 p. (MIRA 14:8)
(Labor and laboring classes) (Labor productivity)

ORLOVSKIY, Il'ya Aleksandrovich; SERGEYEVA, Galina Petrovna; BUDARINA, V., red.; DUDNICHENKO, E., ml. red.; NOGINA, N., tekhn. red.

[Correlation between labor productivity and wages in the U.S.S.R. industry] Sootnoshenie rosta proizvoditel'nosti truda i zarabotnoi platy v promyshlennosti SSSR. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1961. 142 p. (MIRA 14:9)

(Wages and labor productivity)

KOZMA, I.; BAGAYEV, V.P. [translator]; IL'IN, I.S. [translator]; PETROV, I.A. [translator]; LEPNIKOVA, Ye., red.; DUDNICHENKO, E., mald. red.; NOGINA, N., tekhn. red.

[Agriculture of the Rumanian People's Republic on the way to socialism] Sel'skoe khoziaistvo Rumynskoy Narodnoi Respubliki na puti sotsializma. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1961. 99 p. (MIRA 14:10)

(Rumania--Agriculture)

ORESTOV, I.L.; VASIL'CHENKO, L.D.; BUDNICHENKO, L.A.

Volumetric determination of zinc in the presence of 2,6-dichlorophenol indophenol. Izv. vys. ucheb. zav.; khim. i khim. tekh. 4 no.2:319-320 '61. (MIRA 14:5)

1. Pyatigorskiy farmatsevticheskiy institut. Kafedra analiticheskoy khimii.

(Zinc—Analysis) (Indophenol)

AUTHOR: Dudnik, A.A., Engineer SOV-128-58-7-7/20

TITLE: Hydraulic Removal of Waste Molding Sand (Gidroudaleniye otrabotannykh formovochnykh smesey)

PERIODICAL: Liteynoye proizvodstvo, 1958, Nr 7, pp 13-16 (USSR)

ABSTRACT: The hydraulic system used since 1955 on the grey cast iron foundry of the Gor'kiy Automobile Plant for removal of used molding sand by a special pulp line to dumping grounds on the floodlands of the Oka river is described and illustrated by drawings. The redesigned Moskal'kov water-jet used in the system is shown (fig.5). This design permits easy and fast exchange of diffusor elements through an aperture in the casing. Detailed description of the device is given along with pertinent calculations. The wet ventilation system used in the shop for cleaning the air is connected with the main hydraulic removal system so that the polluted water from the wet fans flows into the pulp line. The accompanying calculations

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show the quantity of dust removed from the air by wet ventilation (0.46 tons per hour), the high-pressure and low-pressure water consumption, etc. The system has drastically improved work conditions and cut by 50% the cost of removing waste from the shop. There are 10 diagrams.

1. Molding materials--Handling 2. Foundries--Equipment
3. Foundries--Equipment 4. Foundries--Operation

12(2) SOV/128-59-5-5/35

AUTHOR: Dudnik, A.A., and Ukhabin, G.A., Engineers

TITLE: "Volga" Automobile Engine Crankshaft

PERIODICAL: Liteynoye Proizvodstvo, 1959, Nr 5, pp 8-12 (USSR)

ABSTRACT: In the automobile engine plant at Gorki production of a new crankshaft for the automobile "Volga" has been undertaken under the direction of I.I. Lebendya. A magnesium iron alloy was used. Tab.(1) shows a list of the types of steel mostly used in this branch in the USSR mentioning their chenical composition and mechanical properties. A comparison is made with regard tothe steel as used by the Ford factories. The various casting charges are being made up of steel of types LK-2, LK-3, LK-4 of class A and Xr-6 as well as of steel waste. For reduction of the contents of sulphur, a mixture of 8 parts lime and 2 parts spar fluor is added, being 5 - 6% of the weight of the metal charge. After 20 to 30 minutes a 0.7 to1% carbide mixture (3 parts lime, 1 part charcoal and 1 part

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fluor spar) is distributed on to the metal mirror. Tab. (2) informs of the chemical composition of the slag. By this, the content of sulphur is reduced to 0.002%. In Tab.(3) the chemical composition of the steel modified with magnesium is given. It is reported that the waste was no more than o.6% during the last time. The adding of 250 grams of magnesium to a 400 kg metal charge takes place under pressure and the machine as shown in Fig. (2). Shortly before the casting itself, 0.3% ferrosilicon and 0.025% cryolite according to the proportion of the metal are added. Fig(3). The castings are treated thermically by keeping them for 9 hours at a temperature of 950°C. (First graphitizing stage). There follows cooling by air and further cooling on granular perlite, another heating up to 740°C. for 6 hours and another cooling by air. Mechanical properties are: = 70 - 90; = 60 -70; H_B=217 -255 kg per cu.mm. For improvement of the moding sand, zinc stereates, alcohol, and powder bakelite are added (see Tab.4) Fig. (4) shows an apparatus by which cores (bars) can be molded from molding sand on a pi-

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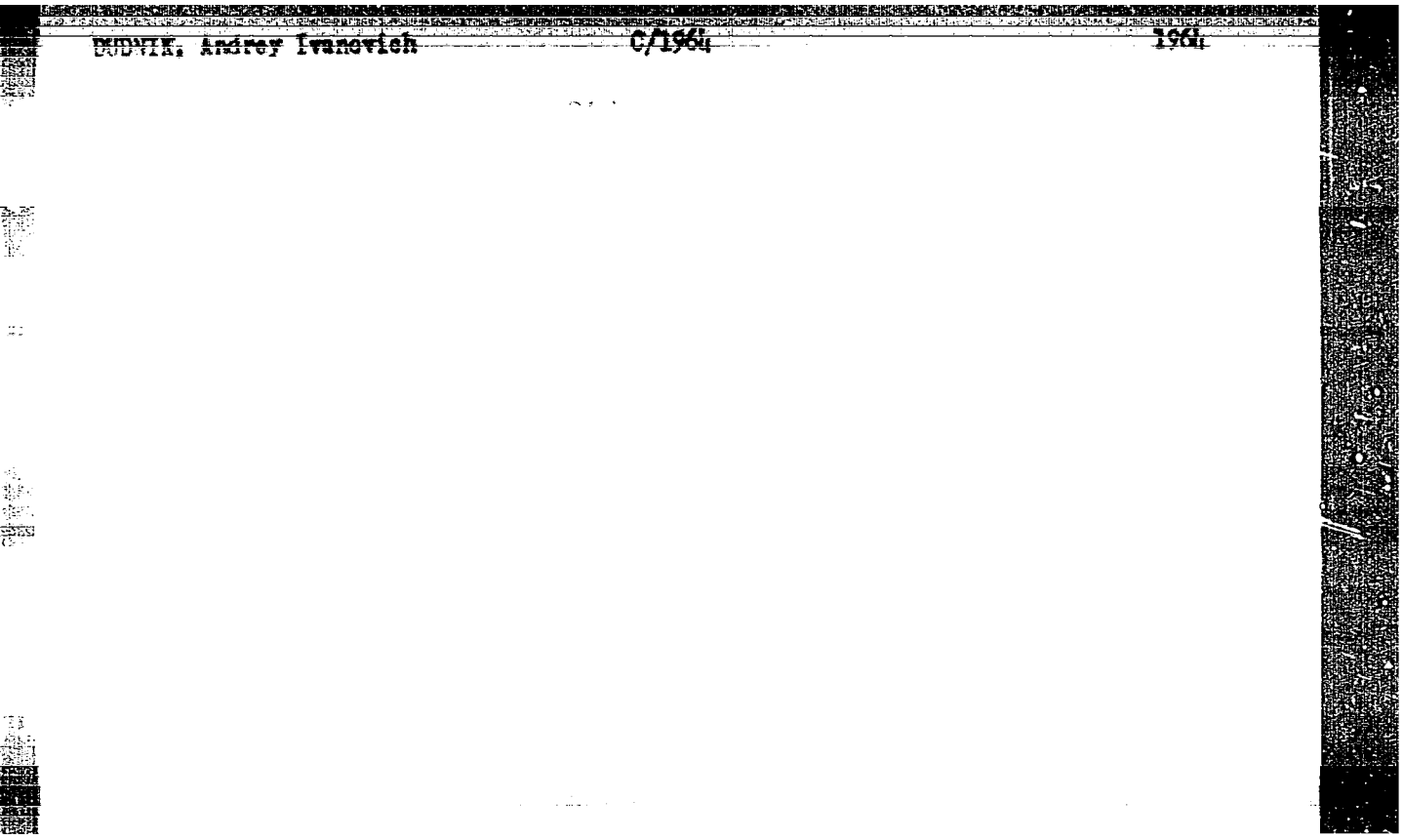
"Volga automobile Engine Crankshaft

voted plate. In Fig. (5) a diagram of the fully automatic machine model AKF-2 for production of casting molds as well as of the drying furnace is given. The crankshaft has a weight of 19.5 kg; for one casting process 8 to 9 seconds are required, the mold being in a horizontal position. The thermic treatment is done fully automatically as described above by the machine shown in Fig. (6). For neutralizing the atmosphere in the machine, 7 kg of triethylamine are added per hour. In Fig. (7) a block diagram of the production process of the crankshaft is given There are 3 Tables, 8 diagrams and 1 photograph.

Card 3/3

DUDNIK, A. G.

Achievements of collective farms of the kaliningra Province. Sots. shiv. 14, No 4:76-77, April 52.



DUDNIK, A.L., prepodavatel'; TARASHCHANSKIY, V.A., prepodavatel'

[Special course "Seismic prospecting methods for ore deposits] Spetsial'nyi kurs "Seismicheskie metody poiskov i razvedki mestorozhdenii polezmykh iskopaemykh"; programma, metodicheskie ukazaniia i kontrol'nye zadaniia dlia uchashchikhsia geofizicheskoi spetsial'nosti zaochnykh otdelenii geologorazvedochnykh tekhnikumov. Kiev, Glav. upr. geol. i okhrany nedr pri Sovete Ministrov USSR, 1960. 129 p. (MIRA 14:8)

1. Kiyevskiy geologorazvedochnyy tekhnikum (for both).
(Seismic prospecting)

1. DUDNIK, A. N.

2. USSR (600)

4. Lemon

7. Raising potted lemons in the home. Priroda 42, No. 3, 1953.

9. Monthly List of Russian Accessions. Library of Congress, May 1953. Unclassified.

DUDNIK, A. YE.

USSR (600)

Thermometers and Thermometry

"Gidra" thermometers. Sakh. prom No. 7 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1952, Uncl.

2

DUDNIK, A.Ye.

Use of the trolley cars for sugar transportation. Sakh. prom. 32 no.8:52 Ag '58. (MIRA 11:9)

1.TSybulevskiy sakharnyy savod.
(Sugar--Transportation)

DUDNIK, A. Ye.

Improvement of the controlled filtration of the first carbonation juice. Sakh.prom. 35 no.6:24 Je '61. (MIRA 14:6)

1. TSybulevskiy sakharnyy zavod.
(Sugar manufacture)

SOV/169-59-3-2979

Translation from: Referativnyy zhurnal, Geofizika, 1959, Nr 3, p 136 (USSR)

AUTHORS: Kashcheyev, B.L., Dudnik, B.S., Lagutin, M.F., Lysenko, I.A., Tolstov, V.V.

TITLE: Radar Observations of the Meteor Activity

PERIODICAL: Mezhdunar. geofiz. god. Inform. byul., 1958, Nr 1, pp 38-42 (Engl. Res.)

ABSTRACT: The article contains the results of meteor activity observations, which were performed in Khar'kov in accordance with the IGY program during the period from July to December 1957. The observations were carried out by a radar method in the 72 Mc range. More than 10,000 meteors were recorded. A circuit is discussed which may be used for meteor observations in the presence of strong noise.

Authors' résumé

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DUDNIK, B.S.; KASHCHEYEV, B.L.; LAGUTIN, M.F.; LYSENKO, I.A.; TOLSTOV, V.V.; DELOV, I.A.

Studying meteoric activity by means of radar on a frequency of 72 mc. Izv.vys.ucheb.zav.; radiofiz. 1 no.2:66-70 '58. (MIRA 11:11)

1. Khar'kovskiy politekhnicheskiy institut.
(Meteors) (Radar in astronomy)

SOV/109-3-11-5/13

AUTHORS: Rudnik, B.S., Kashcheyev, B.L., Lagutin, M.F. and Lysenko, I.A.

TITLE: A Protection System Against the Pulse Interference in the Equipment for the Recording of Meteoric Activity (Sistema zashchity ot impuls'nykh pomekh v apparature, registriruyushchey meteornuyu aktivnost')

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 11, pp 1379 - 1383 (USSR)

ABSTRACT: The equipment developed by the Astronomical Observatory imeni Engel'gart (Ref 1) for the observation of the activity of meteors is inadequate in that it is subject to the influence of external interference. The equipment was therefore modified in the Khar'kovskiy politekhnicheskiy institut (Kharkov Polytechnical Institute) in such a way as to eliminate the effect of pulse interference. The resulting protection system consists of a signal channel and an interference channel (Figure 1). Both channels are provided with identical receivers in which it is possible to tune the local oscillator and the ultra-high frequency units. The receivers are connected to two antennae, A_C and $A_П$. The receiver of the signal

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channel is tuned to the frequency f_c of the radar station while the receiver of the interference channel is tuned to a frequency $f_п$ which is chosen in such a way that $f_п = f_c \pm k\Delta F$, where ΔF is the bandwidth of the receiver and k is the de-tuning coefficient which is of the order of 4-8. The difference in the centre frequencies of the two receivers is necessary in order to make the interference channel insensitive to the useful signals; on the other hand, both the receivers are sensitive to the interference since its energy is spread over a spectrum which is much wider than that of the signal. The video-detector of the interference channel is followed by a selector-amplifier which produces rectangular pulses having an amplitude of 200 V; the pulses are independent of the intensity of the interference provided the latter is greater by a factor of 2.5 than the noise level. The output of the video-detector of the signal receiver is also followed by a

A Protection System Against the Pulse Interference in the Equipment for the Recording of Meteoric Activity

selector-amplifier which produces rectangular pulses. The length of the pulses is proportional to the duration of the signal at the output of the detector (at the limiting level). These pulses are applied to a special stage consisting of two tubes (Figure 2) having a common cathode load consisting of two tuned circuits. Normally, this device is conducting but in the presence of a negative pulse, the resonant circuits produce an oscillatory transient, as can be seen in Figure 3. If the time constants of the resonant circuits are suitably chosen, the output transient of the circuit of Figure 2 will contain a positive overshoot. The output signal from this circuit (which is, in effect, a delay circuit) is applied to the input of a selector tube which can be opened by the positive peaks. The second grid of the selector tube (pentode) is connected to the output of the interference channel. Consequently, in the presence of a negative pulse in the interference channel, the selector tube is closed even if a positive peak is delivered by the signal channel. An interference pulse which appears in both the channels will therefore be

stopped at the selector tube. The above protection system is employed at the meteor station of the Khar'kov Polytechnical Institute, which is carrying out investigations for the IGY (Refs 2 and 3). The improvement obtained by using the protection system is illustrated in Figure 4a and 4b; the first figure shows a record of the meteoric activity in the absence of the protection system, while the second picture illustrates the improvement. There are 4 figures and 4 Soviet references.

SUBMITTED: April 16, 1958

3(1)

AUTHORS: Dudnik,B.S., Kashcheyev,B.L., Lagutin,M.F.,and Lysenko,I.A.

SOV/33-36-1-19/31

TITLE: Velocity of Meteors of the Gemini Shower

PERIODICAL: Astronomicheskiy zhurnal, 1959,Vol 36,Nr 1,pp 141-145 (USSR)

ABSTRACT: In the present paper the authors give the results of measurements of the velocities of meteors made by radio-echo technique during the Gemini shower on December 10-14, 1957 from 23^h to 5^h in Khar'kov. V.V.Tolstov and D.N.Luk'yashko had a share in the measurements. 569 velocities of meteors were determined. 226 meteors had velocities from 32.5 to 37.5 km/sec. Here the mean velocity was 35.9 km/sec.
There are 6 figures and 2 references, 1 of which is Soviet, and 1 English

SUBMITTED: March 5, 1958

Card 1/1

37946
S/035/62/000/005/041/098
A055/A101

3.1710

AUTHORS: Kashcheyev, B. L., Dudnik, B. S., Lagutin, M. F., Lysenko, I. A.

TITLE: Apparatuses for radar observation of meteors

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 5, 1962, 45-46, abstract 5A349 (V sb. "Meteory", no. 1, Khar'kov, Khar'kov university, 1960, 3-10)

TEXT: The authors describe a radar system permitting the investigation of meteoric phenomena. They examine the functional circuits of the apparatuses for measuring the number of meteors at the 36.9 Mc frequency. To enhance the reliability of the obtained results, a pulse-noise prevention device is employed, this device making use of the difference in the spectra of the periodical sequence of rectangular radio pulses and pulse noises. An apparatus is described that permits determining the meteor speeds, the height of the reflecting region of the meteor trail, the radiants and the orbits; it also permits the investigation of the meteor trail drift.. The pulse-coherent method is used for the observation of the trail. For studying turbulent motions in the meteor zone of the atmosphere, extension receiving relay stations are used, into which is fed

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Apparatuses for radar observation of meteors

the reference signal from the master stage of the main transmitter; the recording of the reflections from the meteor trail, received at several spaced stations, is effected on a film at the main station.

B. K.

[Abstracter's note: Complete translation]

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DUDNIK, B.S.

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D274/D301

AUTHORS: Dudnyk, B.S., Kashcheyev, B.L. and Lebedynets', V.N.

TITLE: Errors in radar measurements of meteor velocity, due to diffusion

PERIODICAL: Akademiya nauk UkrSSR. Dopovidi, no. 3, 1961, 299-302

TEXT: If ambipolar diffusion is taken into account, the expression for the strength of the reflected signal at the receiver input, is

$$P_R = \frac{P_T G_T G_R \lambda^3 \alpha^2}{16\pi^2 R^3} \left(\frac{e^2}{mc^2}\right)^2 e^{-2\left(\frac{2\pi r_0}{\lambda}\right)^2} |I|^2, \qquad (1)$$

where P_T is the strength of the transmitter, G_T and G_R are the directivity coefficients of the antennas, R - the distance from the meteor

$$I = \int_{\infty}^{x_0} e^{2\pi i x^2} \cdot e^{-(x_0 - x)} dx; \qquad (2)$$

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Errors in radar measurements...

$$x = \frac{S}{\sqrt{R\lambda}}\ ; \quad x_0 = \frac{S_0}{\sqrt{R\lambda}}\ ; \quad \Delta = \frac{16\pi^2 D\sqrt{R}}{V\cdot\lambda^{3/2}}\ ; \qquad (3)$$

where S is the distance along the trail from the point of mirror reflection, S_0 - the coordinate of the head of the trail, V - the meteor velocity, D - the coefficient of ambipolar diffusion. Neglecting the broadening of the trail while the principal Fresnel zones are formed, one obtains the ordinary Fresnel integral

$$I \approx e^{-\frac{16\pi^2 Dt}{\lambda^2}} \int_{-\infty}^{x_0} e^{2\pi i x^2}\cdot dx. \qquad (4)$$

The positions of the maxima and minima of the diffraction pattern, computed by formula (4), are used for calculating the velocity of meteors, T.R. Kaiser (Ref. 1: Advances Phys., 2, 495 (1953)). The authors carried out, for various values of Δ, numerical integration by formula (2), and determined the exact position of the maxima and minima of the diffraction pattern. Comparing them with the

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Errors in radar measurements...

results obtained by using formula (4), the errors in using approximation (4) were obtained. A figure shows the errors in velocity-values related to the function Δ for the following velocity-measurements: v_1 - measured by the distance between the first and second maximum, v_2 - between first and third, v_3 - between first maximum and first minimum. (The error resulting from measurements by the distance between first and second minimum (v_4) never exceeded 2%). The figure shows that for $\Delta = 1$, the errors of v_1 and v_2 are 12.9 and 25%, respectively. For $\lambda = 8$ m, $v = 40$ km/sec, $R = 200$ km, to $\Delta = 1$ corresponds an altitude of approximately 100km. As at altitudes above 95 km, a large number of meteors is found, diffusion may lead to considerable errors in velocity measurements. Normally, the diffusion coefficient is found (according to formula (4)), by the exponential drop in the amplitude of the reflected signal. The velocity can be also found by measuring the amplitude ratio at the moments of the first and second maximum, and by the relationship between the distances between the first maximum and first minimum, and first minimum and second maximum. A special

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Errors in radar measurements...

study of errors due to diffusion is being carried out by the Khar'kov Polytechnical Institute (since 1957), within the framework of the IGY. A table shows the results of measurements of 10 meteors. From formula (3) it is evident that errors due to diffusion increase with altitude and velocity of meteor; thus the error in v_1 is 5% at 20 km/sec at an altitude of approximately 90 km; the same error, at 60 km/sec will be at approximately 97 km altitude. There are 1 figure, 1 table and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: T.R. Kaiser, Advances Phys., 2, 495 (1953); J.S. Greenhow, E.L. Neufeld, Journal Atm. Terrestr. Phys., 6, 133, (1955).

ASSOCIATION: Kharkivs'kyy politekhnichnyy instytut im. V.I. Lenina (Khar'kov Polytechnical Institute im. V.I. Lenin)

PRESENTED: by Academician V.G. Bondarchuk, AS UkrSSR

SUBMITTED: April 9, 1960

Card 4/4

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S/831/62/000/008/001/016
E032/E114

AUTHORS: Kashcheyev, B.L., Dudnik, B.S., Lagutin, M.F., Lebedinets, V.N., Luk'yashko, D.N., and Lysenko, I.A.

TITLE: Radar observations of meteors at Khar'kov

SOURCE: Ionosfernyye issledovaniya (meteory). Sbornik statey, no.8. V razdel programmy MGG (ionosfera). Mezhduved. geofiz. kom. AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 7-20

TEXT: This paper reports the results of analyses of radio echoes from meteor trails which were recorded at the Khar'kovskiy politekhnicheskiy institut imeni V.I. Lenina (Khar'kov Polytechnical Institute imeni V.I. Lenin) during July 1957 - May 1959. The observations were in accordance with the IGY programme and were carried out at 73.2 Mc/sec and 36.9 Mc/sec. Special measures were taken to suppress extraneous interference. Pulse lengths of ten microseconds were employed at repetition frequencies up to 500 cps and power per pulse ~50-70 kW. The detector sensitivity was 5×10^{-14} W. The half-power beamwidth in the final

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experiments was ± 20° (vertical plane) and ± 17° (horizontal plane). The meteor velocities were measured by a diffraction method in which the velocities relative to earth were determined from signal amplitude fluctuations. Altogether 300 000 reflections from sporadic meteors were recorded and average diurnal variations in the number of meteors were obtained throughout the period. Fig.10 shows three typical distributions (number of meteors versus mean sidereal time). The velocity distributions were also determined as functions of time and are reproduced in the paper. Finally, the mass distribution of sporadic meteors was found from the lengths of the reflected pulses. It was found that

$$N = N_0 m^{s-1} \quad \text{where} \quad s \sim 2.$$

Owing to the large beamwidth, weak meteor showers could not be detected against the sporadic background. Brief details are given about the following showers which were the only reliably detected showers: Quadrantids, Lyrids, Geminids, η-Aquarids and Arietids (daytime). There are 16 figures.

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3.2440
9.9600

S/831/62/000/008/002/016
E032/E114

AUTHORS: Dudnik, B.S., Kashcheyev, B.L., and Lebedinets, V.N.

TITLE: The effect of diffusion on radar measurements of the velocity of meteors

SOURCE: Ionosfernyye issledovaniya (meteory). Sbornik statey, no.8. V razdel programmy MGG (ionosfera). Mezhduved. geofiz. kom. AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 21-25

TEXT: It is noted that in all meteor velocity determinations the expansion of the meteor trail during the time of formation of the main Fresnel zones is neglected and hence the position of the maxima and minima of the diffraction pattern from which the meteor velocities are computed are found from the usual Fresnel integral

$$I \approx e^{-\frac{16\pi^2 Dt}{\lambda}} \int_{-\infty}^{x_0} e^{2\pi i x^2} dx \qquad (3)$$

where D is the coefficient of ambipolar diffusion and λ is the wavelength.

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T.R. Kaiser (Advances Phys., 2, 1953, 495) is said to have arrived at the erroneous conclusion that if

$$\Delta = \frac{16\pi^2 D \sqrt{R}}{v\lambda^{\frac{3}{2}}} \leqslant 2$$

where R is the oblique range to the meteor and v is its velocity, then the approximate expression for I given above does not introduce appreciable errors into the velocity calculation. The present authors have carried out a numerical integration of the more exact expression

$$I = \int_{\infty}^{x_o} e^{2\pi i x^2} e^{-\Delta(x - x_o)} dx \qquad (2)$$

where $x = \frac{s}{\sqrt{R\lambda}}$, $x_o = \frac{s_o}{\sqrt{R\lambda}}$

and s is the distance along the trail measured in the direction of motion of the meteor from the point of specular reflection;

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s_o is the value of s at the head of the trail. Fig.1 shows the calculated relative errors in the above approximate velocity as a function of Δ (curve a - velocity determined from the distance between the first and second maxima; curve b - velocity determined from the distance between the first and the third maxima; curve c - velocity determined from the distance between the first maximum and the first minimum). When $\Delta = 1$, the errors for a, b and c are found to be 12, 9 and 25% respectively. When the velocity is determined from the distance between the second and third maxima the error is never greater than 2%. Numerical data are reproduced for meteors observed in accordance with the IGY programme. It is noted that when $\Delta > 1.5$, the diffusion coefficient can no longer be determined from the tail of the reflected signal because this tail is no longer exponential. However, Δ can be found by measuring the ratio of the amplitudes at the first and second maxima. The diffusion correction reaches about 5% at velocities of 20 km/sec and heights of about 90 km when the velocity is determined from the distance between the first and second maxima. When the velocity is 60 km/sec the 5% level

occurs at about 97 km. Since diffusion has the maximum effect on the position of the first maximum of the diffraction pattern, it is recommended that at heights greater than 90 km it is better to use maxima other than the first maximum.
There are 3 figures and 2 tables.

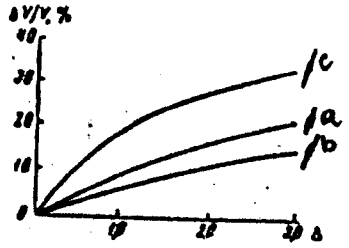

Fig. 1

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ACCESSION NR: AT4043267 S/3105/63/000/02-/0022/0033

AUTHOR: Dudnik, B. S.

TITLE: Amplitude-phase method for measuring the altitude of a meteor

SOURCE: Kharkov. Politekhnicheskiy institut. Kafedra osnov radiotekhniki. 5 razdel programmy* MGG: Ionosfera i meteory*. Meteory*; sbornik statey, no. 2/3, 1963, 22-33

TOPIC TAGS: meteor, meteor altitude, amplitude phase method

ABSTRACT: A new method, which is more accurate than the method proposed by J. A. Clegg and J. A. Davidson (Phil. Mag., (7)41, 77-85, 1950) for measuring the altitude of a meteor was developed within the framework of the International Quiet Sun Year program. An RF transmitter was used which transmits 10 μsec pulses at 39.9 mc and a peak power of 100 kw. The basic prf of 500 cps and an auxiliary prf of 100 cps were used. The transmitter antenna has an azimuth beamwidth of 18° and a maximum gain at 38° elevation. The return signal is recorded on film from an A-scope which is only activated when a threshold is crossed and has a recording interval of 0.16 sec. The 500 cps prf is used for amplitude-phase measurement and the 100 cps prf is used to increase the slant range to 1500 km and

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ACCESSION NR: AT4043267

for altitude measurement. The receiver consists of 2 pairs of halfwave, symmetrical, horizontal dipoles mounted above a 60 x 60 m conducting plane. The first pair is mounted at elevations of 3.61 m and 16.82 m and the second pair at 3.61 m and 13.55 m. The antenna separation is 20 m and they are located 45 m from the edge of the reflecting plane. Two separate but identical coherent receivers of 400 kc bandwidth are employed, one for each antenna pair. Each receiver has two RF channels which are alternately switched between two antennas in such a way that the lower antenna receives the 500 cps prf signal while the upper antenna receives the 100 cps prf signal. After common IF amplification the outputs of the envelope detector and phase detector are displayed on a cathode ray tube and photographed. Meteor velocity is determined from envelope fluctuations. The elevation angle, sin Θ , is determined from the relationship between the amplitudes of the 100 cps and 500 cps signals since the antenna lobing structure is known. Drift velocity due to wind is determined from changes in period of the received pulses. Availability of phase information from lower antennas enhances the accuracy of the measurement. A special calibration procedure is required to attain identical characteristics in both receivers. The system was tested under almost realistic conditions using

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ACCESSION NR: AT4043267

an airplane equipped with a special synchronized transmitter. Experimental data was used to obtain the anticipated altitude measurement error at a mean altitude of 95 km. The error in altitude $\Delta H \cong 0.4$ km for a slant range of 100 km and $\sin\theta \cong 0.95$, and $\Delta H \cong 3.0$ km for a range of 240 km and $\sin\theta = 0.4$. The corresponding figures for the Clegg and Davidson method are 3.2 and 13 km, respectively. Orig. art. has: 16 equations, 11 figures and 1 table.

ASSOCIATION: Kafedra osnov radiotekhniki Khar'kovskiy politekhnicheskiy institut (Department of Basic Radio Engineering, Khar'kov Polytechnical Institute)

SUBMITTED: 00 ENCL: 00 SUB CODE: AA

NO REF SOV: 003 OTHER: 003

Card 3/3

ACC NR: AT7001923 SOURCE CODE: UR/3010/66/000/017/0069/0074

AUTHOR: Dudnik, B. S.

ORG: none

TITLE: Method of measuring the angular coordinates of a meteoric radio echo

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ABSTRACT: This article examines a method for solving the problem of determining the angular coordinates of a meteoric radio echo by means of a phase-shift goniometer device. The method is based on known theoretical relations between signal phases in two antennas as a function of the direction of the wave front. The reflected waves are assumed to be plane since meteor trains are usually detected at distances of the order of 100 km from the observer. The phase goniometer consists of nine half-wave symmetric, horizontal vibrators placed at a height of 0.5 λ above the Earth's surface. The antennas are grouped in pairs and form four bases: small and large north bases, and small and large east bases. The antennas are tuned to wave 8.13 m and can be rotated north or east. The basic diagram of the phase goniometer with a circular sweep is presented. The device was tested at the end of 1963, however, it was

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not possible to record the actual relation of phase signals as a function of the angular coordinates of an airborne emitter. The phase goniometer was checked by comparing the results of measuring the heights of meteor trains obtained during simultaneous observation of the radio echo by an amplitude-phase altimeter and the phase-shift goniometer. The simultaneous measurements convinced the author that the phase-shift method is effective. Orig. art. has: 5 figures.

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